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| APPLICATION NO.                                                                 | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---------------------------------------------------------------------------------|-------------|----------------------|---------------------|------------------|
| 10/681,045                                                                      | 10/07/2003  | Robin J. Harvey      | HLR014-DIV          | 2714             |
| 28848                                                                           | 7590        | 05/06/2004           | EXAMINER            |                  |
| TOPE-MCKAY & ASSOCIATES<br>23852 PACIFIC COAST HIGHWAY #311<br>MALIBU, CA 90265 |             |                      | ASSAF, FAYEZ G      |                  |
|                                                                                 |             |                      | ART UNIT            | PAPER NUMBER     |
|                                                                                 |             |                      | 2872                |                  |
| DATE MAILED: 05/06/2004                                                         |             |                      |                     |                  |

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                 |               |  |
|------------------------------|-----------------|---------------|--|
| <b>Office Action Summary</b> | Application No. | Applicant(s)  |  |
|                              | 10/681,045      | HARVEY ET AL. |  |
|                              | Examiner        | Art Unit      |  |
|                              | Fayez G. Assaf  | 2872          |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br/> Paper No(s)/Mail Date <u>10/7/03</u>.</p> | <p>4) <input type="checkbox"/> Interview Summary (PTO-413)<br/> Paper No(s)/Mail Date. ____.</p> <p>5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</p> <p>6) <input type="checkbox"/> Other: ____.</p> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**DETAILED ACTION**

***Specification***

Related applications should be updated to their current status.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amon (US 6,423,969 B1.)

Amon discloses a multi element apparatus capable of simultaneously focusing a plurality of wavebands in substantially the same focal plane (line 1 to line 43 of Col. 1), comprising, a first element comprising a first composition (10 of Fig. 1), a first index of refraction, and a first and second surface substantially perpendicular to the perimeter wherein the first surface has a first geometry and wherein the

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second surface has a second geometry (see table 1), a second element (11 of Fig. 1) comprising a second composition and having a thickness, a perimeter, a second index of refraction, and a first and second surface substantially perpendicular to the perimeter wherein the first surface has a third geometry and wherein the second surface has a fourth geometry (see table 1), and the first and second elements are aligned such that the second surface of the first element and the first surface of the second element are in substantial conformity with each other and aligned such that the perimeters essentially form a column.

Regarding claim 3, Amon discloses the first element (10 of Fig. 1) consisting essentially of Zinc sulfide, the second element (11 of Fig. 1) consisting essentially of Zinc selenide, wherein the second geometry of the first element of the first element geometry of the second element form an interface.

Regarding claim 4, Amon discloses the first element (14 of Fig. 1) consisting essentially of Zinc sulfide, the second element (13 of Fig. 1) consisting essentially of Zinc selenide, wherein the second surface geometry of the first element and the first surface geometry of the second element form an interface.

Amon discloses the claimed structure of the multi-element apparatus; however, the reference does not expressly teach the

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recited method steps of fabricating the multi-element apparatus, i.e. the objective lens.

However, and lacking showing to the contrary, the method steps of iteratively optimizing parameters and verifying convergence of obtained results by means of ray tracing is a building block in software design packages.

It would have been obvious, at the time the invention was made, to a person having ordinary skill in the art to design such method steps to obtain the desired results, because the recited steps conforms to available computer design packages.

Regarding claim 5, the combination discloses the claimed invention except for the variable distance between second and third surfaces being selected to optimize the multiple waveband focusing properties.

However, having a distance adjustable between lenses in compound lens system is conventional.

It would have been obvious, at the time the invention was made, to maintain a variable distance between the first and second lens for the purpose of fine tuning the optical apparatus when temperature fluctuation are large. Further, it has been held that the provision of adjustability, where needed, involves only routine skill in the art. In re Stevens, 101 USPQ 284 (CCPA 1954).

Regarding claim 6, the combination discloses the claimed invention except for the apparatus having a 30-cm aperture and approximately a 71-cm focal length in both bands.

However, a design of the aperture and focal length is application dependent and well known.

It would have been obvious, at the time the invention was made, to a person having ordinary skill in the art to select such values, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 2, the combination discloses the claimed invention except for the millimeter waves being 30GHz and 300GHz and the infrared radiation being between .75 and 750 micrometers. However, such values are obtainable by the same method steps with proper change of desired parameters, so as to obtain versatile use lens.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fayez G. Assaf whose telephone number is (571) 272-2307. The examiner can normally be reached on 8-5 M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Fayez Assaf*

Fayez G. Assaf  
Examiner  
Art Unit 2872

FA  
5/3/04